

REMARKS

Claims 1-8 are pending in this application. Claim 1 is independent.

Claim Rejection - 35 USC 102(e)

Claims 1-5 and 8 have been rejected under 35 U.S.C. 102(e) as being unpatentable over U.S. Patent No. 6,122,646 (Igarashi et al., "Igarashi"). Applicant respectfully traverses this rejection.

Claim 1

Claim 1, in a preferred embodiment, is directed to a disk medium managing method for managing data to be recorded on a disk medium by file format and representing a hierarchical structure by directories comprising:

predefining an area on the disk as a directory by storing on the disk medium area location information for the area (e.g., Fig. 11, steps S10, S13, and S15, Update Management Information of the Directory Descriptor; "Area Location Information" Fig. 9), and

recording files and directories within the area defined as the directory based on stored area location information (e.g., Fig. 12, steps S20, S21, S23, S25, Write Data into the Retrieved Area).

In a further embodiment of the present invention, the area location information for the directory includes a beginning block number (e.g., Starting LBN) and a number of continuous block

numbers after the beginning block (e.g., Number of Logical Blocks). (Fig. 9B).

In the rejection of claim 1, the Office Action states that Igarashi's "second area" (i.e., "Volume Management Area") teaches the claimed "area". The Office Action states that Igarashi's "root directory" teaches the claimed "directory". The Office Action states that Igarashi's "first location information" (i.e., Volume Descriptor VD), "second location information" (i.e., Index to DRB), and "third location information" (i.e., Index to ER) teach the claimed "area location information".

It appears that the Office Action is implying that defining a "Volume Management Area" that includes the location of the root directory within the Volume Management Area (Volume Descriptor VD of Fig. 5), as well as location of the file, teaches the claimed invention.

Applicant submits that Igarashi's "Volume Management Area" fails to teach an area on a disk medium pre-defined as a directory, i.e., "root directory", and that Igarashi's "first location information", "second location information", and "third location information" fails to teach area location information stored on the disk and indicating the location of the pre-defined area.

The Context of Sections in Igarashi relied on in the rejection are directed to retrieval of files and directories. The Claim recites recording.

The Office Action relies on a section at column 5, line 47 to column 6, line 7, and a section at column 4, lines 64-67, for teaching a step of pre-defining an area as a directory by storing area location information and a step of recording files and directories. As can be seen at column 4, line 46, and column 5, line 40, these sections pertain to "An information retrieving method." Applicant submits that neither of the claimed method steps are explicitly disclosed in those sections.

Aside from a separate Volume Management Area, Igarashi's method of recording files on a disk is conventional. Igarashi fails to disclose that allocation units in the Extent Area are pre-defined as a directory.

Igarashi

Igarashi is directed to an arrangement of a hierarchical file structure on recording mediums, such as magneto-optical disc or optical disc. Igarashi's arrangement is based on an objective of obtaining high-speed retrieval of a predetermined directory file, as well as quick updating of directory information (column 2, lines 31-38; see also a summary of the advantages at column 22, line 19, to column 23, line 19).

Igarashi's "Volume Management Area" maintains information about the location of directories and files and is physically located in a separate part of a disc from the data itself; file data, or alternatively, audio information is stored in a separate "Extent area" (see Fig. 4). By separating the storage of directory and extent records from the "extent area", where file data is stored, Igarashi's invention achieves quick retrieval of directory and file location information (see column 22, lines 6-12).

According to Igarashi, the Volume Descriptor VD is recorded in the first management block No. 0 of the Volume Management Area (Fig. 5), and indicates the value of the management block in which the root directory is recorded (column 13, lines 61-65). A Volume Space Bitmap is stored at management block No. 1. Data indicating the use state of the entire disc is recorded in the Volume Space Bitmap (column 14, lines 1-4). The Volume Space Bitmap carries out this management of use state in allocation units called allocation block (column 14, lines 5-8).

At the time of initiation of the disc, data tracks are prepared, and allocation blocks are registered into the Volume Space Bitmap as disable (11). Boot Cluster and allocation blocks of the Volume management area are registered as used (01). Allocation blocks of the Extent Area are registered as available (00) (column 14, lines 33-39).

In recording data of a file, a search is made of available (00) allocation blocks in the Volume Space Bitmap. The corresponding entry in the Volume Space Bitmap is changed to used (01) (column 14, lines 40-45).

Directory Records Blocks (DRB) or Extent Records Blocks (ERB) are allocated to management blocks No. 4, and succeeding numbers. A directory consists of one or more DRB's and a Directory Record recorded into a DRB. The Directory Record consists of information for a directory and/or information for a file (Fig. 8). Information for a directory includes: Name, Index to DRB, ID, Size, Date). Information for a file includes: Extent Record of File Data, Name, Index to ER, Extent Start Location, Number of Blocks, ID, Size, Date) (column 15, lines 5-8).

Recording of data in a Data Record Block is described with respect to Figs. 9-12, for the Management Table shown in Fig. 7. Fig. 9 shows recording of the root directory (ID=00000002).

Differences over Igarashi

Igarashi discloses that

- 1) a directory structure is defined in a Volume Management Area,
- 2) a file is recorded in the Extent area,
- 3) the location of the file is recorded in allocation units of the Volume Management Area, and
- 4) location of the allocation units is stored in a Directory Record.

In other words, Igarashi teaches conventional steps of recording a file before storing the location information in a Directory Record in the Volume Management Area. The directory information stored in the Volume Management Area is information indicating the hierarchical relationship of the root directory and linked sub-directories. Igarashi's invention of storing location information in a separate Volume Management Area is for quicker "retrieval" and updating (see Abstract of Igarashi).

Igarashi indicates, at column 2, line 65, to column 3, line 16, and at column 3, lines 41-58, that an Extent Record of Fig. 14 is created without pre-defining the area indicated in the Extent Record as a directory. Thus, recording of the file is not restricted to a set of allocation units pre-defined as a directory. Rather, similar to conventional recording methods, a file is recorded on a disk based on space availability and requirements, then the location and extent information is entered into the Volume Management Area. In other words, Igarashi does not teach, for example, that allocation units in the Extent Area are pre-defined as a directory.

Unlike Igarashi, the present invention is directed to a disk medium management method comprising 1) pre-defining an area on the disk medium as a directory by storing on the disk medium area location information for the area, and 2) recording files and directories within the area defined as the directory based on the stored area location information.

Therefore, Applicant submits that Igarashi fails to teach each and every element of claim 1.

Claim 8

Claim 8 is directed to the invention of claim 1 wherein the area location information for the directory includes a beginning block number and a number of continuous block numbers after the beginning block.

The Office Action refers to a section of Igarashi at col. 15, lines 27-30 as teaching the feature of claim 8. In particular, Igarashi discloses "Extent Start Location" and "Number of Blocks". It appears that "Extent Start Location" and "Number of Blocks" of Igarashi allegedly teach the claimed "beginning block number" and "number of continuous block numbers", respectfully.

As can be seen at col. 15, lines 27-30, of Igarashi, "Extent Start Location" and "Number of Blocks" pertain to a file recorded in the extent area. Claim 8, on the other hand, pertains to a directory and recites "area location information for said directory."

Summary

The arguments in the above for claim 1 apply to dependent claims 2-5 and 8, as well. Accordingly, Applicant respectfully requests that the rejection be withdrawn.

Claim Rejection - 35 USC 103(a)

Claims 6 and 7 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi in view of U.S. Patent No. 6,134,586 (Walker). Applicant respectfully traverses this rejection.

The Office Action admits that Igarashi fails to teach the additional limitation expressed in claims 6 and 7. Instead the Office Action relies on Walker for making up for the deficiency.

However, Walker also does not teach pre-defining an area on the disk as a directory and recording files and directories within the defined area. Thus, Walker fails to make up for the deficiency in Igarashi. At least for this reason, Applicant submits that the rejection fails to establish *prima facie* obviousness for claims 6 and 7.

Applicant respectfully requests that the rejection be withdrawn.

Conclusion

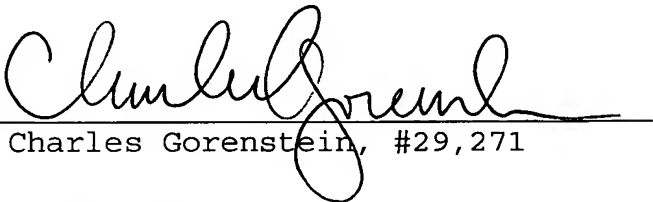
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert W. Downs (Reg. No. 48,222) at the telephone number of the undersigned below, to conduct an interview

in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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